

**REMARKS**

Claims 5, 12, 18, 25 and 32 are amended. Claims 10, 16, 23 and 31 are canceled. New claims 38-42 are added. The new claims are supported by the originally-filed application at, for example, pg. 8.

Claims 5-9, 11-15, 17-22 and 24-37 stand rejected under 35 U.S.C. §102(b) as being anticipated by Tsu et al. (5,635,741). Claim 32 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Arita et al. (6,236,076) in view of Ueda et al. (6,285,051).

Dependent claims 10, 16 and 23 stand objected to as depending from rejected respective base claims.

Independent claim 5 is amended to include the limitations of objected to dependent claim 10, and therefore, claim 5 is allowable as amended.

Dependent claims 6-9, 11 and 33 depend from allowable claim 5, and therefore, claims 6-9, 11 and 33 are allowable.

Independent claim 12 is amended to include the limitations of objected to dependent claim 16, and therefore, claim 12 is allowable as amended.

Dependent claims 13-15, 17 and 34 depend from allowable claim 12, and therefore, claims 13-15, 17 and 34 are allowable.

Independent claim 18 is amended to include the limitations of objected to dependent claim 23, and therefore, claim 18 is allowable as amended.

Dependent claims 19-22, 24 and 35 depend from allowable claim 18, and therefore, claims 19-22, 24 and 35 are allowable.

Regarding independent claim 25, such claim stands rejected as being anticipated by Tsu. Claim 25 is amended to include the limitations of dependent claim 31. Accordingly, as amended, claim 25 recites one of the metals when bonded with oxygen producing a first material having a first dielectric constant, absence of the one metal in the oxide creating a vacancy and a second material having a second dielectric constant which is less than the first dielectric constant; and the metal oxide with multiple different metals bonded with oxygen comprises barium strontium titanate, and the **one metal comprises at least one of barium and strontium**. That is, this claim recites at least one of barium and strontium having a first dielectric and the absence of at least one of barium and strontium having a second dielectric constant. The claim then recites to a relationship between the two dielectric constants. Tsu provides teachings to a dielectric constant with regard **only to erbium** wherein doping a BST layer with erbium decreases the dielectric constant (Table 1; col. 1, ln. 40 through col. 2, ln. 15). Tsu does not provide any teachings for dielectric constants regarding any other metal, other than erbium, and definitely not with respect to barium and/or strontium. Consequently, it is inconceivable that Tsu teaches or suggests the absence of the one metal (at least one of barium and strontium) in the oxide creating a vacancy having a second dielectric constant which is less than the

first dielectric constant (of at least one of barium and strontium) as positively recited in claim 25. Tsu fails to teach or suggest a positively recited limitation of claim 25, and therefore, claim 25 is allowable.

Claims 26-30 and 36 depend from independent claim 25, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

Regarding independent claim 32, such claim stands rejected as being anticipated by Tsu, and as being obvious over the combination of Arita in view of Ueda. Regarding the anticipation rejection, claim 32 is amended to recite the electrodes comprise material of at least one of conductively doped polysilicon, conductively doped hemispherical grain polysilicon, tungsten, tungsten nitride and titanium oxygen nitride. As amended, the list of materials for electrodes as recited in claim 32 is not taught by Tsu (see list provided at col. 6, Ins. 29-33). Accordingly, Tsu fails to teach or suggest a positively recited limitation of claim 32, and therefore, claim 32 is allowable over Tsu.

Regarding the obviousness rejection, claim 32 recites a capacitor comprising first and **second conductive electrodes** having a high k charge storage dielectric region positioned therebetween. The Examiner states he inadvertently referred to the wrong element of Arita to teach the second conductive electrode and now refers to element 82 of Arita to allegedly teach the

second conductive electrode (pg. 10 of paper no. 041604). However, element 82 of Arita is a gate oxide of a transistor, **not a second conductive electrode** as positively recited in claim 32 (col. 12, Ins. 55-56). Accordingly, the combination of Arita and Ueda fails to teach or suggest a positively recited limitation of claim 32, and therefore, claim 32 is allowable.


Moreover, the structure of Arita relied upon by the Examiner to teach the positively recited capacitor of claim 32 is a transistor, not a capacitor (col. 12, Ins. 55-56), and any combination of art to teach a capacitor for modifying the transistor of Arita is inappropriate. For this additional reason, the obviousness rejection based on the combination of Arita and Ueda fails, and therefore, claim 32 is allowable.

Claims 33-37 depend from independent claim 32, and therefore, are allowable for the reasons discussed above with respect to the independent claim, as well as for their own recited features which are not shown or taught by the art of record.

This application is now believed to be in immediate condition for allowance, and action to that end is respectfully requested. If the Examiner's next anticipated action is to be anything other than a Notice of Allowance, the undersigned respectfully requests a telephone interview prior to issuance of any such subsequent action.

Respectfully submitted,

Dated: 9-17-04

By:   
D. Brent Kenady  
Reg. No. 40,045